MECHANICAL ABBREVIATIONS

ABBREVIATIONS USED ON DRAWINGS IN GENERAL ARE LISTED BELOW. REFER TO CSI DOCUMENT TD 2-4 DATED NOVEMBER 1986 FOR ANY ABBREVIATION USED ON THE DRAWINGS BUT ARE NOT LISTED BELOW.

ABV	ABOVE
AC	AIR CONDITIONING
ACCU	AIR COOLED CONDENSING UNIT
ACU	AIR CONDITIONING UNIT
AFF	ABOVE FINISHED FLOOR
AFMS	AIR FLOW MEASURING STATION
AHU	AIR HANDLING UNIT
AL	ALUMINUM
ALT	ALTERNATIVE
AMB	AMBIENT
AP	ACCESS PANEL
APPROX	APPROXIMATE
AR	ACID RESISTANT
ARCH	ARCHITECT(URAL)
ARV	AIR RELIEF VALVE
AT	AIR TRANSFER
ATR	AIR TEMPERATURE RISE
ATV	AIR TURNING VANES
AUTO	AUTOMATIC
AVE	AIR VOLUME EXTRACTOR
BD	BAROMETRIC DAMPER
BDD	BACKDRAFT DAMPER
BHP	BREAK HORSEPOWER
BLDG	BUILDING
BOD	BOTTOM OF DUCT
BOT	BOTTOM
C	CONVECTOR
CA	COLD AIR
CAB	CABINET
CD	CEILING DIFFUSER
CDL	CONDENSATE DRAIN LINE
CFM	CUBIC FEET PER MINUTE
CH	AIR COOLED CHILLER
CHWR	CHILLED WATER RETURN
CHWS	CHILLED WATER SUPPLY
CHWP	CHILLED WATER PUMP
CL	CENTERLINE
CLG	CEILING
CMP	CORRUGATED METAL PIPE
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
COND	CONDENSER(ATE)
CONN	CONNECT/CONNECTION
CONSTR	CONSTRUCTION
CONTR	CONTRACTOR
CPD	CONDENSATE PUMP DISCHARGE
CPRSR	COMPRESSOR
CW	COLD WATER (DOMESTIC)
CWP	CONDENSER WATER PUMP
CWR	CONDENSER WATER RETURN
CWS	CONDENSER WATER SUPPLY
D	DEPTH/DEEP
DB	DRY BULB TEMPERATURE
DIA/ø	DIAMETER
DIFF	DIFFUSER
DISCH	DISCHARGE
DLR	DOUBLE LOUVER REGISTER
DWG	DRAWING
DUC	DOOR UNDER CUT
EA	EXHAUST AIR
EF	EXHAUST FAN
EFF	EFFICIENCY
EG	EXHAUST GRILLE
EL	ELEVATION
ELEC	ELECTRIC(AL)
ELEV	ELEVATOR
EMD	END OF MAIN DRIP
EMER	EMERGENCY
EP	ELECTRIC/PNEUMATIC
EQUIP	EQUIPMENT
EXH	EXHAUST
EXIST	EXISTING
EXP	EXPANSION
EXT	EXTERIOR
EXTN	EXTENSION
F&TT	FLOAT AND THERMOSTATIC TRAP
FC	FLEXIBLE DUCT CONNECTION
FCU	FAN COIL UNIT
F/SD	COMBINATION FIRE/SMOKE DAMPER
FD	FLOOR DRAIN
FD1	FIRE DAMPER TYPE
FIN FL/FF	FINISH FLOOR
FLR	FLOOR
FOR	FUEL OIL RETURN
FOS	FUEL OIL SUPPLY
FOV	FUEL OIL VENT
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FT	FEET
FUR	FURNACE
G	GAS (NATURAL)
GA	GAUGE
GAL	GALLON
GALV	GALVANIZE(D)
GPM	GALLONS PER MINUTE
H	HEIGHT/HIGH
HDG	HEAVY DUTY GRILLE
HDWE	HARDWARE
HHR	HEATING HOT WATER RETURN
HHS	HEATING HOT WATER SUPPLY
HHWP	HEATING HOT WATER PUMP
HP	HORSEPOWER
HPR	HIGH PRESSURE STEAM RETURN
HPS	HIGH PRESSURE STEAM SUPPLY
HTR	HEATER
HVAC	HEATING/VENTILATING/AIR CONDITIONING
HW	HOT WATER (DOMESTIC)
ID	INSIDE DIAMETER
IH	INTAKE HOOD
INCIN	INCINERATOR
INSUL	INSULATION/INSULATE
INTR	INTERIOR
INV	INVERT
KIT	KITCHEN
KW	KILOWATT
L	LENGTH/LONG
LAV	LAVATORY
LF	LINEAR FEET
LP	LIQUID PETROLEUM
LPR	LOW PRESSURE STEAM RETURN
LPS	LOW PRESSURE STEAM SUPPLY
LVR	LOUVER
MAX	MAXIMUM
MECH	MECHANICAL
MFR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MOD	MOTOR OPERATED DAMPER
MPR	MEDIUM PRESSURE STEAM RETURN
MPS	MEDIUM PRESSURE STEAM SUPPLY
MTD	MOUNTED
NIC	NOT IN CONTRACT
NO/#	NUMBER
NOM	NOMINAL
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OC	ON CENTER
OD	OUTSIDE DIAMETER
OPNG	OPENING
OR	OIL RETURN
OS	OIL SUPPLY
OSD	OPEN SITE DRAIN
P	PUMP
PCHWS	PRIMARY CHILLED WATER SUPPLY
PCHWR	PRIMARY CHILLED WATER RETURN
PE	PNEUMATIC/ELECTRIC
PREFAB	PREFABRICATED
PRV	PRESSURE REDUCING VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PTAC	PACKAGE TERMINAL AIR CONDITIONING UNIT
PVC	POLYVINYL CHLORIDE
R/RAD	RADIUS
RA	RETURN AIR
RACU	ROOM AIR CONDITIONING UNIT
RADN	RADIATION
RAG	RETURN AIR GRILLE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
REG	REGISTER
REQ'D	REQUIRED
RH	RELIEF HOOD
RHW	RECIRCULATED HOT WATER (DOMESTIC)
RL	REFRIGERANT LIQUID
RL48	RETURN LINEAR SLOT DIFFUSER (48" LONG)
RM	ROOM
RP	RADIANT PANEL
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
RSD	ROUND SUPPLY DIFFUSER
SA	SUPPLY AIR
SCHED	SCHEDULE
SD	SUPPLY DIFFUSER
SAG	SUPPLY AIR GRILLE
SHT	SHEET
SIM	SIMILAR
SL48	SUPPLY LINEAR SLOT DIFFUSER (48" LONG)
SP	STATIC PRESSURE
SPEC(S)	SPECIFICATION(S)
STD	STANDARD
TC	TEMPERATURE CONTROL
TCV	TEMPERATURE CONTROL VALVE
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TXV	THERMAL EXPANSION VALVE
TYP	TYPICAL
UH	UNIT HEATER
UON	UNLESS OTHERWISE NOTED
UV	UNIT VENTILATOR
V	VENT
VA	VALVE
VAC	VACUUM
VAV	VARIABLE AIR VOLUME
VB	VACUUM BREAKER
VD	VOLUME DAMPER
VEL	VELOCITY
VIF	VERIFY IN FIELD
VVF	VARIABLE VOLUME-FAN POWERED
VVR	VARIABLE VOLUME-REHEAT
VFD	VARIABLE FREQUENCY DRIVE
W	WIDE/WIDTH
W/	WITH
W/O	WITHOUT
WB	WET BULB TEMPERATURE
WCO	WALL CLEANOUT

MECHANICAL SYMBOLS

NOTE: ALL SYMBOLS MAY NOT BE USED ON THIS PROJECT.

- PIPE TURNED UP
- PIPE TURNED DOWN
- PIPE OUT TOP
- PIPE OUT BOTTOM
- INDICATES DIRECTION OF DOWNWARD PITCH
- INDICATES EXPANSION LOOP
- PIPE ANCHOR
- PIPE ALIGNMENT GUIDE
- PIPE EXPANSION JOINT
- STRAINER
- UNION
- SHUT-OFF VALVE
- CHECK VALVE (ARROW TOWARD DIRECTION OF FREE FLOW)
- BALANCING VALVE
- MOTOR OPERATED VALVE
- PNEUMATIC OPERATED VALVE
- SOLENOID OPERATED VALVE
- 2-WAY TEMPERATURE CONTROL VALVE
- 3-WAY TEMPERATURE CONTROL VALVE
- NEEDLE VALVE
- WATER PRESSURE REDUCING/ REGULATING VALVE
- WATER PRESSURE RELIEF VALVE
- AIR RELIEF VENT
- CONNECT NEW TO EXISTING, VERIFY SIZE AND LOCATION OF EXISTING ON SITE
- THERMOSTAT
- THERMOSTAT WITH GUARD
- HUMIDISTAT
- PLAN NOTES
- EQUIPMENT SCHEDULE NUMBER
- EQUIPMENT NOTES
- DETAIL REFERENCE BUBBLE
- SECTION REFERENCE BUBBLE
- FLAT OVAL DUCTWORK

- ECCENTRIC REDUCER
- FLOW CONTROL VALVE
- THERMOMETER
- PRESSURE GAUGE
- GAS SHUT-OFF COCK
- LUBRICATED PLUG VALVE
- SAFETY PRESSURE RELIEF VALVE
- GAS PRESSURE REDUCING/ REGULATING VALVE
- CHAIN OPERATED VALVE
- DOUBLE CHECK VALVE ASSEMBLY
- REDUCED PRESSURE BACKFLOW PREVENTER
- ATMOSPHERIC VACUUM BREAKER
- PRESSURE VACUUM BREAKER
- STEAM TRAP
- GRISWOLD FLOW CONTROL VALVE
- HHS — HEATING HOT WATER SUPPLY
- HHR — HEATING HOT WATER RETURN
- CHWS — CHILLED WATER SUPPLY
- CHWR — CHILLED WATER RETURN
- CS — CONDENSER WATER SUPPLY
- CR — CONDENSER WATER RETURN
- RL — REFRIGERANT LIQUID
- RS — REFRIGERANT SUCTION
- CDL — CONDENSATE DRAIN LINE

SUPPLY AIR ELBOW UP
DIMENSION DESCRIPTION:
1ST FIGURE = SIDE SHOWN
2ND FIGURE = SIDE NOT SHOWN

SUPPLY AIR ELBOW DOWN

EXHAUST/RETURN AIR ELBOW UP

EXHAUST/RETURN AIR ELBOW DOWN

DOUBLE SIDE TRANSITION
TRANSITION SLOPE SPECIFICATION:
MINIMUM SLOPE = 15°
MAXIMUM SLOPE = 45°
ALL SIZES IN INCHES

SINGLE SIDE TRANSITION

INTERNALLY LINED DUCTWORK

TOP TRANSITION (SLOPE ON TOP)

BOTTOM TRANSITION (SLOPE ON BOTTOM)

ANGELED RISE IN RECTANGULAR DUCTWORK

ELBOW UP
DIMENSION DESCRIPTION:
14"ø = ROUND DUCT
24/12 FO = FLAT OVAL DUCT

ELBOW DOWN

ELBOW – RADIUS (R) =
1.5 TIMES DIAMETER OF DUCT

ANGLED RISE IN ROUND DUCTWORK

SQUARE OR RECTANGULAR DUCT TAKE-OFF FROM MAIN. PROVIDE BALANCING DAMPER AT TAKE-OFF IF BRANCH DUCT SERVES A SINGLE AIR TERMINAL DEVICE.

ROUND OR FLAT OVAL DUCT TAKE-OFF FROM MAIN. PROVIDE BALANCING DAMPER AT TAKE-OFF IF BRANCH DUCT SERVES A SINGLE AIR TERMINAL DEVICE.

CONNECTION TO FAN POWERED TERMINAL UNITS. FLEXIBLE CONNECTIONS ON INLET AND DISCHARGE OF UNIT. PROVIDE VIBRATION ISOLATING HANGERS ON ALL FAN POWERED TERMINAL UNITS.

CONNECTION TO INLINE FAN. FLEXIBLE CONNECTION ON INLET AND OUTLET OF FAN. PROVIDE FLEXIBLE CONNECTIONS ON ALL SUSPENDED FANS.

MAXIMUM LENGTH OF FLEXIBLE DUCT TO AIR TERMINAL DEVICE SHALL NOT EXCEED 5'-0" IN LENGTH. CONNECTIONS TO TERMINAL DEVICES SHALL BE BANDED AND TAPED.

CONTRACTOR NOTE:

ALL EQUIPMENT, PIPING AND DUCTWORK SUSPENDED FROM STRUCTURAL STEEL SHALL BE SUPPORTED FROM PANEL POINTS ON EACH STRUCTURAL MEMBER.

DIFFUSER/GRILLE TAGS

CFM / A / CFM

A / CFM

DEFLECTION / CFM A SIZE

SIZE / A / CFM / DEFLECTION

CFM / SIZE A DEFLECTION

DEFLECTION A CFM / SIZE

SIZE / A / CFM

CFM / SIZE A

CFM A SIZE

OTHER COMBINATIONS OF LOCATIONS ARE POSSIBLE.

2-WAY BLOW DIFFUSER — 2-WAY BLOW DIFFUSER — 3-WAY BLOW DIFFUSER

ALL CEILING DIFFUSERS SHALL BE 4-WAY BLOW, UNLESS INDICATED OTHERWISE ON DRAWINGS. HATCHING INDICATES BLANKED-OFF SIDE(S) OF DIFFUSER (TYPICAL)

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REGISTRATION

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KEY PLAN

SHEET TITLE

MECHANICAL SYMBOLS & DETAILS

M1.01